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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,889	02/19/2004	Shinji Nakadeguchi	402979/SOGA	9076
23548	7590	03/22/2006		
LEYDIG VOIT & MAYER, LTD 700 THIRTEENTH ST. NW SUITE 300 WASHINGTON, DC 20005-3960			EXAMINER BRYANT, DAVID P	
			ART UNIT	PAPER NUMBER
			3726	

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary	Application No. 10/780,889	Applicant(s) NAKADEGUCHI ET AL.	
	Examiner David P. Bryant	Art Unit 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>021904</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on February 20, 2003 (JP 2003-042925). It is noted, however, that applicant has not filed a certified copy of the Japanese application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Harman et al. (U.S. Patent No. 5,353,496).

Claim 1: Harman et al. teach a heat exchanger tube expanding apparatus **10** (Figure 3) for assembling a heat exchanger having a laminated stack of fins **F** to be joined together with a plurality of substantially U-shaped hairpin tubes **T**. The apparatus comprises:

a plurality of mandrels **16**, each mandrel having a billet **17** on a leading end (column 4, lines 15-24);

a reciprocating actuator **22** for supporting the rear ends of the mandrels and being supported for reciprocating movement in an axial direction of the tubes (column 4, lines 30-34);

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a pressure drive source **24** for raising and lowering the reciprocating actuator such that the billets enter the tubes and expand the tubes against aligned openings disposed through the fins (column 4, lines 40-44);

a plate **11** including hairpin receivers therein (Figure 1) for supporting the curved portions of the hairpin tubes (column 4, lines 1-6);

a fin receiver **58** (Figures 3 and 4) disposed near the curved ends of the tubes for supporting the lowermost fin **F2** of the laminated fins (column 6, lines 18-20); and

a raising and lowering means **56/51/59** for raising and lowering the fin receiver in the axial direction, wherein the raising and lowering means lowers the fin receiver to a predetermined position as the billets of the mandrels are inserted into the tubes (see column 7, line 44, to column 8, line 15).

Claim 3: Although Harman et al. do not explicitly state that the raising and lowering means lowers the fin receiver at a speed that increases in stages as tube expansion progresses, it is noted that Harman et al. disclose in column 2 (lines 15-24), column 7 (lines 19-31), and column 8 (lines 20-28) that control panel **CP** may be preprogrammed to control the sequential movements of the various drives of the apparatus, as well as the rates thereof. Therefore, the apparatus of Harman et al. is *inherently capable* of performing the claimed function of increasing the lowering speed of the fin receiver in stages as tube expansion progresses.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Harman et al. (U.S. Patent No. 5,353,496).

Claims 2 and 4: These claims differ from Harman et al. in calling for a hydraulic cylinder for the raising and lowering means. In Harman et al., the raising and lowering means is comprised of a servomotor connected to a screw drive.

The selection of a hydraulic cylinder, rather than the servomotor and screw drive of Harman et al., is deemed to have been an obvious matter of choice to one of ordinary skill in the art, since both mechanisms would provide accurate, finite adjustment of the fin receiver, and neither provides any particular advantages over the other when utilized in this manner.

Claims 5 and 6: These claims differ from Harman et al. in calling for an elastic body made of resin for the raising and lowering means. In Harman et al., the raising and lowering means is comprised of a servomotor connected to a screw drive.

The selection of a resinous elastic body for the raising and lowering means, rather than the servomotor and screw drive of Harman et al., is deemed to have been an obvious matter of choice to one of ordinary skill in the art, since both mechanisms would provide a desired level of downward movement of the fin receiver during tube expansion. Further, although not being easily adjustable for different fin packs and heat exchangers, the resinous elastic body would provide a more cost efficient alternative to the servomotor and screw drive arrangement of Harman et al., while at the same time achieving the object of the invention (i.e. to compensate

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for the shrinkage of the length of the straight leg portions of the hairpin tubes and the simultaneous growth in the height dimension of the fin pack; see column 2, lines 9-14).

Allowable Subject Matter

Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Although a number of the references cited incorporate some type of vibration to facilitate assembly of the tubes and fins of a heat exchanger (e.g. see U.S. Patent Nos. 4,204,312; 5,029,388; and 5,687,473), the prior art fails to teach or fairly suggest a vibrating means for vibrating *the hairpin receivers* of a heat exchanger assembly apparatus.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David P. Bryant whose telephone number is 571-272-4526. The examiner can normally be reached on Monday-Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Nguyen can be reached on 571-272-4491. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "David Bryant", with a long horizontal flourish extending to the right.

David P. Bryant
Primary Examiner
Art Unit 3726

DPB
3/18/06